

IPRO 335:
Renovation of Alumni Memorial Hall
Spring 2007

Final Report

Advisors: Eduardo DeSantiago & Ralph Muehleisen

Introduction:

IPRO 335 for the spring semester of 2007 is the Civil and Architectural Engineering Capstone Project for current students in the CAE program. The scope of the project was to being the process of renovating Alumni Memorial Hall, the home to the Civil, Architectural, and Environmental Engineering department. The goal was to do a complete analysis of the building from the structure to the mechanical and electrical, and an analysis of the usage of the space and determining the needed improvements to make Alumni Hall ADA compliant.

The IPRO 335 team was set up into three small teams: the architecture, the civil engineers, and the architectural engineers. Each of the teams was responsible for completing the work in their respective field. This initial stage of the project the team started in was very difficult to get a lot of cross team collaboration. The team leaders bridge the gap between each of the teams to know what each team needed from the other whether it was analysis or space requirements or information to be included on the interviews.

Background:

Alumni Memorial Hall is an original Mies van der Rohe Building that was constructed in the mid-1940s. This was Mies' first academic building on campus which has been altered several times through the lifetime of the building and as such has very old mechanical and electrical systems. It is currently used by the Civil, Architectural, and Environmental Engineering department, but it was originally designed to be an armory building. As the school has not maintained the building as well as it should have, some parts of the building have started to fail from age and exposure to the elements. Because of these and other issues, the school is looking to give the building a much needed face lift.

Purpose:**Architecture**

The purpose of the work done by the architecture team this semester was to determine a current space analysis, code analysis, and understanding what needs to be done to make Alumni Memorial a LEED certified structure. The team identified the users as the faculty, staff, and students. The team also added an additional user, visitors to the list because the Mies Society has requested to add a museum

and office space for the Mies Society in Alumni Memorial Hall. The team gathered information from interviews and questionnaires to find out what the users needed for classroom and lab space. We also worked with the architects at Holabird and Root to understand what their plan was for alumni and to make suggestions on their designed based on what our data proved.

Architectural Engineering:

The purpose of this IPRO was to begin to determine what would be needed to refurbish Alumni Hall and make it better suited to its current and future uses. In terms of architectural engineering, there were several areas that needed to be analyzed in order to begin the process of planning the upgrades. The first area was the energy use of the building. The building was built at a time when energy was inexpensive and before some modern materials like thermal glass were ready for use in this context. As such, any plan to update the building should include ways of reducing the energy consumption, and an energy model is important to see what modifications would cost-effectively reduce energy usage. The other areas have to do with determining how the building relates to modern codes and building practices. In order to bring the building up to modern standards, the architectural engineering team had to analyze the current electrical system; heating, ventilation, and air conditioning system; plumbing system; lighting system; and the current codes and standards that correspond to those systems. Modern systems increase the safety, comfort, usefulness, and efficiency of the building. These analyses will allow others in the future to see what systems need to be upgraded or replaced when the building is remodeled.

Civil Engineering:

In terms of civil and structural engineering, the purpose of our work was to determine if Alumni Memorial Hall was in need of structural renovation. As the architecture team hoped at the beginning of the semester to add a third story to the building, our work turned to a feasibility study of adding a third floor. In order to complete this study, we planned on analyzing the current structure to see if it would be able to handle the loads associated with an additional story. We focused on the most

critical areas, in this case, the columns, footings, and bearing soil beneath the columns. In addition to these critical portions of the structure, we also analyzed the floor systems to find the allowable loads according to current code. After completing analysis of the structure, the team would work to strengthen the structure for a third floor, if necessary.

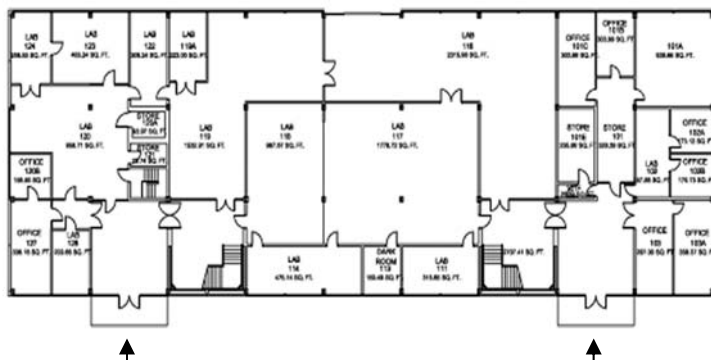
Research Methodology

Architecture

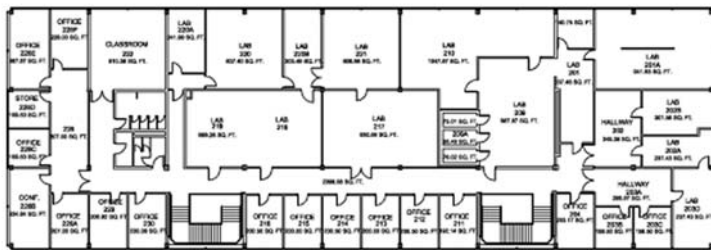
The team created a questionnaire to hand out to the students who used Alumni Memorial Hall on daily basis. We also conducted interviews with the faculty from the CAE department to understand their needs and concerns for the renovation of the Alumni Memorial. Below is a copy of the questionnaire and questionnaire analysis that was done based on the answers from the questionnaires. The architecture team used the Chicago Building Codes and LEED scoring packet to determine the needs to make alumni ADA compliant and LEED certified. We also had a walk through the lab spaces done by two professors to get an understanding of the amount of equipment used by the CAE department and usage of each of the lab spaces located on the first floor. Also during this time one of the architecture team members was researching funding opportunities to pay for the renovation of Alumni Memorial.

TO ACCOMMODATE THE GROWING POPULATION OF THE CIVIL & ARCHITECTURE ENGINEERING DEPARTMENT, THE ALUMNI MEMORIAL HALL IS IN A TRANSITION TO RENOVATE AND EXPAND, TO HOUSE MORE CLASSROOMS, MORE LABS, AND OFFER MORE EASE AND CONVENIENCE. YOUR INPUT IS GREATLY APPRECIATED AND VALUED IN ORDER TO PROVIDE FOR YOU THE MOST SUITED AND IDEAL BUILDING.

PLEASE CHECK YOUR CLASSROOM OR FREQUENTLY USED ROOM ON THE PLAN



FIRST FLOOR



SECOND FLOOR

1. HOW MANY HOURS DO YOU SPEND IN THE ALUMNI MEMORIAL HALL PER WEEK?

- A. <5 B. 5-6 C. 7-8 D. 10 E. OTHER _____

2. FOR WHAT PURPOSE DO YOU VISIT THE AM? (MULTIPLE CHOICE)

- A. CLASS
 B. COMPUTER LAB
 C. LAB
 D. STUDY GROUPS
 E. OTHER _____

3. HOW EASY IS IT TO NAVIGATE THROUGHOUT THE ALUMNI HALL?

1=EASY 5=DIFFICULT

- A. 1 B. 2 C. 3 D. 4 E. 5

4. HOW BIG IS THE CLASS (NUMBER OF STUDENTS)?

5 IS THERE ENOUGH NATURAL LIGHT IN THE AM/ROOM?

1=NEED LIGHT 5= ENOUGH LIGHT

- A. 1 B. 2 C. 3 D. 4 E. 5

6 IS THERE ENOUGH ARTIFICIAL LIGHT IN THE AM/ROOM?

1=NEED LIGHT 5= ENOUGH LIGHT

- A. 1 B. 2 C. 3 D. 4 E. 5

7 RELATIVE TEMPERATURE (ACCORDING TO THE SEASONAL CHANGE)

SPRING/FALL -

SUMMER -

WINTER -

8. WHAT KIND OF EQUIPMENT DO YOU NEED?(IF YOUR CLASS NEED EXPERIMENTS OR SPECIAL EQUIPMENTS)

9. IS THERE ENOUGH STORAGE FOR EXPERIMENTAL EQUIPMENT?(IF YOU ARE USING THE LAB)

10. IN YOUR OPINION, WHAT IS, IF ANYTHING, LACKING IN THIS FACILITY?

**11. WHAT CAN BE DONE TO IMPROVE YOUR USAGE OF IT?
EX. LIBRARY, GROUP MEETING ROOM, ETC.**

Architectural Engineering

To analyze the building, the following general steps were taken. First, the team gathered all of the drawing of the building that was available. Second, the drawings were roughly compared to the building to determine how closely they represented the actual conditions. Third, relevant data was pulled from the drawings and from inspecting the building itself. Fourth, applicable codes and standards were consulted and relevant data was pulled from them. Finally, the current conditions and the codes were compared. The energy model, however, was slightly different in that it was not compared to current codes, and research and analysis of the available software packages for energy modeling had to be completed in order to find one that suited the needs of the project.

Civil Engineering

In order to analyze the building, the team took the following steps. First, we looked at existing structural drawings to learn as much as we could about the original structure. Since we were not able to see most of the structure due to flooring, ceilings, and partitioning, we assumed the structural drawings to be correct for the as-built structure. We also contacted facilities for any information they had regarding the soil in the area of the building. After this, we determined which building code would apply for the structural renovation that would be needed to add an additional floor. Once we determined the applicable building code, we determined the minimum loads the structure would have to resist. For analysis, a model of the structure was created in SAP2000. After different analysis cases were run in SAP2000, we checked the structure and bearing soil for strength.

Assignments:**Architecture:**

Initial Planning:

Plans sections and elevations on to CAD: All-completed
Historic Status: Rebekah Reid-completed
Code Research: Nate Woods- partially complete
LEED Certification research: Nate Woods- partially complete
Cost Analysis: Brad Ford-completed

Analysis:

Questionnaires-Hyunjoo Oh, Nate Woods-completed
Questionnaire Analysis: Hyunjoo Oh-completed

Design:

Block Diagrams: Brad Ford, Hyunjoo Oh, and Youjoung-
Completed
Schematic Design: Nate Woods, Hyunjoo Oh-completed

Architectural Engineering

Determine Existing Conditions

Building Walk Through – All; partially completed
Data Collection – Tania; lighting analysis only
Documentation (Photos) – All; partially completed
Facilities – Tamakia, completed
Current Occupants – Tania, architects; completed

Model existing conditions

Energy – Jeff and Steven; complete
Electrical System
Current Codes – Matt; substantially complete
Occupant Requirements – Matt, architects; partially complete

HVAC System

Current Codes – Tamakia; partially complete
Occupant Requirements – Tamakia; partially complete

Plumbing

Current Codes – Jeff
Occupant Requirements – Jeff, architects; partially complete

Life Safety

Current Codes – Not assigned; not completed

Acoustics

Occupant Requirements – not assigned; not completed

Recommend Upgrades – All; partially complete

Recommended Upgrades

Mechanical – Matt; substantially complete

Electrical – Matt; substantially complete

Plumbing – Jeff, architects; partially complete

Acoustics – Not assigned; not completed

Safety – Not assigned; not completed

Civil Engineering

Determine Existing Conditions:

Determine Lateral Resisting System – Matt – Partially Completed

Acquire Soil Report – Syed – Partially Completed

Acquire Original Structural Specifications – Alek – Not Completed

Determine Material Strengths – Prince – Completed

Detail Connections – Dan – Completed

Code Requirements:

Acquire Original Chicago Building Code – Jared – Partially Completed

Acquire Current Chicago Building Code – Syed – Completed
LEED applicability for structural renovations – Prince and Dan – Completed

Determine minimum loading – Syed – Completed

Modeling:

Construct SAP2000 Model of Current Structure – Jared and Matt – Completed

Load model with existing loads – Jared – Completed

Load model with proposed loads – Jared – Completed

Analysis:

Analyze column strengths – Syed – Completed

Analyze column buckling loads – Syed and Alek – Partially Completed

Analyze slab on grade strength – Alek – Completed

Analyze 1st floor slab strength – Prince – Completed

Analyze 2nd floor slab strength – Matt – Completed
Analyze roof slab strength – Dan – Partially Completed
Analyze soil bearing capacity – Syed and Alek – Completed
Analyze footing strength – Syed and Alek – Completed

Retrofits:

Column strengthening – Not Assigned
Slab strengthening – Not Assigned
Beam strengthening – Not Assigned

Obstacles:

Architecture

A few obstacles came up during the course of the project. Our main obstacle was receiving the necessary information from the other two smaller teams because they were waiting on items to complete their analysis. The other obstacle we had was receiving our questionnaires back in a timely fashion so we could have determined the space needs of alumni.

Architectural Engineering

Several obstacles came up over the course of the project. The first obstacle was getting information. The Facilities department did not readily provide information, and the plans that were available did not represent the current conditions of the building as several changes had been made and not documented. Also, some of the plans were not scanned very well. This was resolved by going through a professor who had a relationship with facilities and could pull information. Additionally, the team physically looked at and documented the building with photographs where possible. Another obstacle was the lack of communication between teams. There were very few meetings between teams to share information. Some team members did not respond to e-mails in a timely fashion, either. This was not resolved as the problem was not apparent until very late in the project. A third obstacle was that the project involved interaction with several people to get information. This slowed down the project as much time was spent waiting for people to respond to requests for information. This problem was partially

solved by visiting people in person and making direct requests. The last obstacle was the team's lack of experience in dealing with a project of this size and without well-defined parameters. There were many things to do, and the team did not know how to break up tasks and set deadlines because no one was very experienced at predicting man-hours required to complete a task and how to develop an optimal sequence of tasks. The team also had to spend some hours determining which tools to use for certain tasks, such as the energy model, and how to collect the necessary data. This obstacle also was not really solved since it did not become apparent until late in the project.

Civil Engineering

As with any structural project, our team faced many obstacles. Perhaps the most challenging obstacle to overcome was a lack of information. A critical step in the analysis of the structure was whether the soil would be able to handle the load from an additional floor of load. However, it was impossible to get a soil report for the area immediately near Alumni Memorial, and so we requested reports from the MTCC area. Delays in getting this information from Facilities severely hindered our progress this semester. Another obstacle we faced was the inability to accurately assess the critical properties of the structural materials of the building. Ideally, we would have liked to perform material testing on the structural steel and concrete used in the building, so we would be able to use these values in our analysis. However, we were forced to use the conservative assumptions used in the original design of the structure. While this conservative approach is acceptable for design, if strength had turned out to be an issue, we would want accurate material properties, so as to utilize the full load resisting capacity of the structure. Another obstacle we faced was the inability to properly determine the lateral load resisting system. We, again, were conservative in our analysis, however, being able to take a good look at the connections as they exist, and the interaction between the brick walls and steel framing would allow us to fully utilize the strength of the entire structural system in our analysis. Lastly, the team was faced with inexperience in completing a feasibility study for renovation. While a few members of the team are currently enrolled in a structural renovation class, this does not provide the

experience necessary to properly complete a feasibility study. To overcome this obstacle as best as we could, we tried to simplify the structure into something we were more familiar with. We feel that this ended up being conservative, and a more thorough analysis would provide similar results.

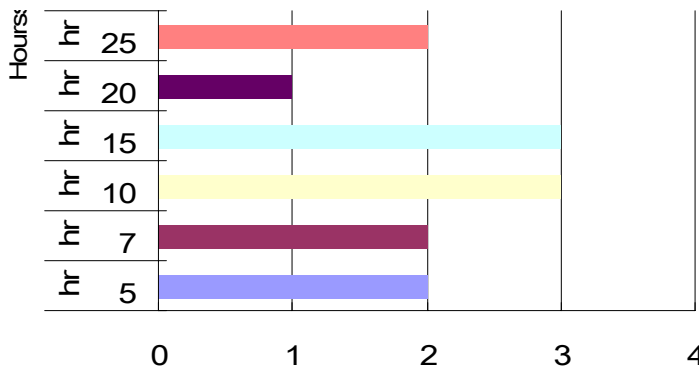
Results:

Architecture

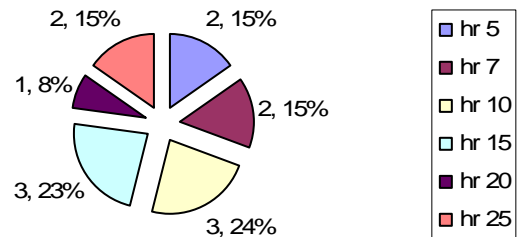
Our analysis showed that newer lab space needed to be created. It also showed additional classroom space was needed for the department. The students wanted to have a common area for them to meet and work on homework together. We were also able to allocate space within alumni for the Mies Museum and office space for the Mies Society. Also we have found that there are several forms of funding available to renovate alumni. Below are the results of the survey and funding options available for the renovation of Alumni Hall.

QUESTIONNAIRE ANALYSIS

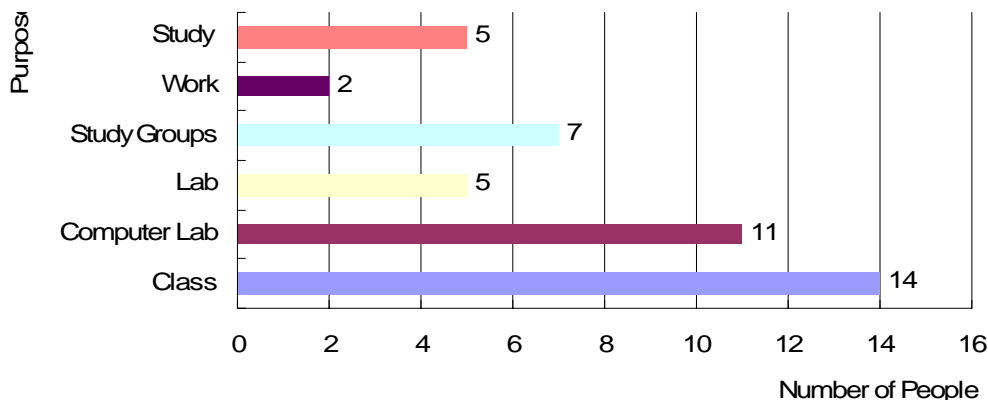
Hours Spent in AM



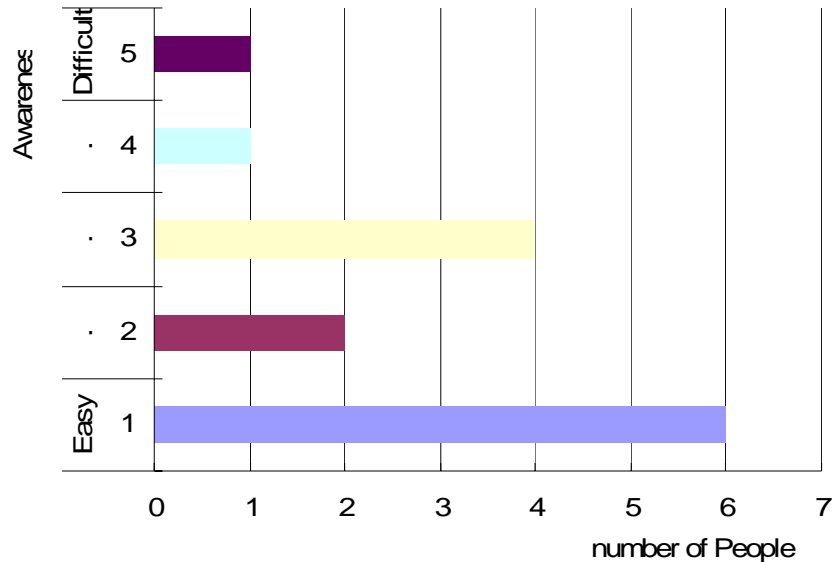
Hours Spent in AM



Purpose of Visiting



Navigating AM



Most Class Sizes

20,30-40 students

Equipment needed

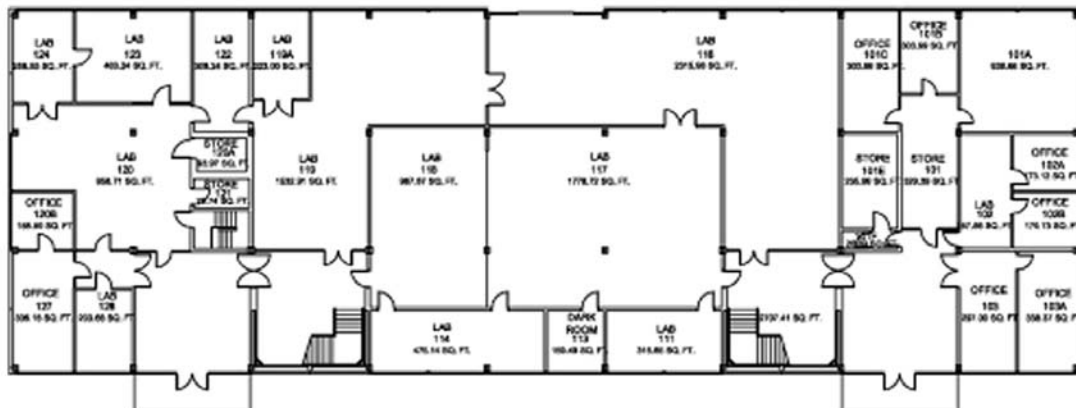
Computers with SAP 2000(program), Projector, Lab testing Equipment, Elmo, Copy Machine

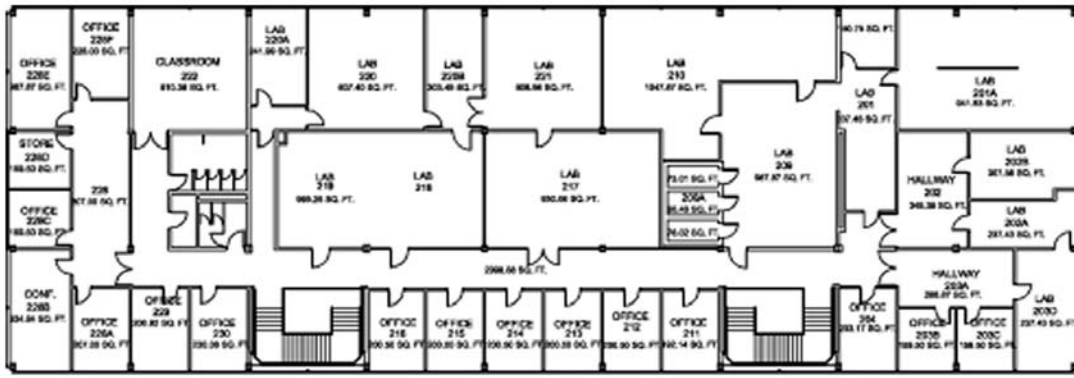
Students need

Lab space, Computer lab space, Reference Library, Bigger Classrooms, hydrology lab, good heating and cooling system, another computer lab where has no classes, women’s bathroom downstairs, Study Area, Student Study Room, Renovate 221, Student Lounge,

Lacking Facility

Table Space, Work/study area, Tables, Chairs, Hall way on first floor connecting east and west, Bathrooms





Name of Organization	Scholarship Name	Eligibility	Justification for Eligibility	Scholarship Maximum Worth	Due Date	Abstract/Mission Statement - Further reasons to pursue funding
Abell Foundation	Community Development	not eligible	Grants intended for Baltimore or Maryland organizations	not eligible	not eligible	
	Arts and Culture	not eligible	Grants intended for Baltimore or Maryland organizations	not eligible	not eligible	
	Conservation and Environment	not eligible	Grants intended for Baltimore or Maryland organizations	not eligible	not eligible	
Agape Foundation	Board of Trustees Grants for Organizations	not eligible	Grants intended for California organizations	not eligible	not eligible	
Allstate Foundation	Grants	not eligible	The Allstate Foundation makes grants to nonprofit, tax-exempt U.S. organizations under Section 501(c)(3) of the Internal Revenue Code. The foundation does not support the following : .6. Memorial Grants	not eligible	not eligible	
American Architectural Foundation (AAF)	Richard Morris Hunt Fellowship	not eligible	Fellowship for individual architect pursuing career in historic preservation	not eligible	not eligible	
American Express Company	Cultural Heritage	possibly eligible	Eligible organizations must certify tax-exempt status under Section 501(c)(3) and 509(a)(1), (2), or (3) of the U.S. Internal Revenue Code. Organizations outside the United States must be able to document not-for-profit status. Applicants must not discriminate on the basis of race, religion, creed, national origin, disability, handicap, age, sexual orientation, marital status, veteran status, or any other basis prohibited by law.	not specified	varies	The American Express Company's Cultural Heritage giving theme seeks to preserve and enrich our diverse cultural heritage. The company support organizations and projects that preserve or rediscover important cultural works and major historic sites in order to provide ongoing access and enjoyment for current and future audiences. The programs the company supports include a broad range of arts and culture: from historic landmarks and public spaces to dance, theater, music, film and the visual arts. The company emphasize preserving works that represent a range of diverse cultures. Supported programs must embrace preservation and enable ongoing public access and exposure through one or more of the following: 1) Ensuring public engagement with a restored work of art or historic site. 2) Producing or presenting a new interpretation of a work that is in danger of being lost. 3) Preserving significant cultural traditions.
American Philosophical Society (APS)	Jacques Barzun Prize in Cultural History	not eligible	"It is awarded annually to the author or authors whose book exhibits distinguished work in American or European cultural history."	not eligible	not eligible	
Art Institute of Chicago	Internships	not eligible	University not eligible for individual internships, but is a local sponsor worth investigating for possible funding opportunities.	unspecified	varies	Part of Mission Statement : "The purposes for which the Art Institute of Chicago is formed are: to found, build, maintain, and operate museums, schools, libraries of art, and theaters; to provide support facilities in connection therewith; to conduct appropriate activities conducive to the artistic development of the region; and to conduct and participate in appropriate activities of national and international significance."
Arts and Humanities Research Council (AHRC)	Project Fund	not eligible	Grants intended for United Kingdom organizations	not eligible	not eligible	
Barbour Foundation, Inc., Bernice	Grants	not eligible	Grants only made to organizations that "directly benefit animals."	not eligible	not eligible	
Beveridge Foundation, Frank Stanley	Grants	not eligible	Grants awarded in Massachusetts counties of Hampden and Hampshire.	not eligible	not eligible	
Bruner Foundation, Inc.	Rudy Bruner Award for Excellence in the Urban Environment (RBA)	possibly eligible	The project must be a real place, not just a plan or program. Programs alone will not be considered. Since site visits are integral to the award process, the project must have been in operation for a sufficient amount of time to demonstrate success. The project must be located in the contiguous 48 states. There are no distinct categories. Projects may include any type of place which makes a positive contribution to the urban environment, broadly defined to include incorporated cities, towns, or villages; a neighborhood within a city; an urban county; or an officially recognized region made up of two or more cities.	\$ 50,000.00	biennially in odd numbered years	The Rudy Bruner Award considers form only one aspect of urban excellence. An excellent urban place involves the interplay of process, place and values. Processes may be inclusive, innovative or participatory. Places may be grandiose or modest, new or historic, but they must be well designed. Values guide the inevitable trade-offs involved in bringing a project to life. The award seeks to illuminate the complex process of urban placemaking, so that it may be strengthened to better reflect the balance between form and use; opportunity and cost; preservation and change.
Bush Foundation - Grants to Organizations - Arts and Humanities	Capital Projects	not eligible	Must be member of Minnesota Private College Council or a four-year private college in North or South Dakota	\$ 1,000,000.00	March 1, July 1, November 1	
Bush Foundation - Grants to Organizations - Education	Matching Capital Challenge Grants	not eligible	Must be member of Minnesota Private College Council or a four-year private college in North or South Dakota	\$ 1,000,000.00	March 1, July 1, November 1	
Cadbury, William A Charitable Trust	Grants	not eligible	Grants awarded to United Kingdom charity organizations	unspecified	continuous	
Chicago Historical Society	Internships	not eligible	University not eligible for individual internships, but is a local sponsor worth investigating for possible funding opportunities.	unspecified	continuous	The Chicago History Museum is a privately endowed, independent institution devoted to collecting, interpreting, and presenting the rich multicultural history of Chicago and Illinois, as well as selected areas of American history, to the public through exhibitions, programs, research collections, and publications. International Paper, in partnership with The Conservation Fund, annually honors the conservation accomplishments of two individuals. The Conservation Partnership Award is presented annually to recognize an individual who has achieved significant results in the protection of habitat through a cooperative relationship with a business or corporation. By demonstrating that a healthy environment and economy are not mutually exclusive, this person furthers a conservation effort and encourages others to form similarly productive alliances with businesses.
Conservation Fund	Conservation Partnership Award	not eligible	A nominee (as an individual or through a business or organization) must have achieved significant results in the protection of terrestrial or wetland habitat in the United States; and demonstrated the positive value of cooperative partnerships between businesses and the conservation community.	\$ 10,000.00	15-Apr-08	
Department for Environment, Food and Rural Areas (Defra)	Climate Challenge Fund	not eligible	Grants awarded to United Kingdom organizations	unspecified	unspecified	

Name of Organization	Scholarship Name	Eligibility	Justification for Eligibility	Scholarship Maximum Worth	Due Date	Abstract/Mission Statement - Further reasons to pursue funding
Downing Foundation, J.C.	Grants	possibly eligible	No restrictions based on geography, applicants from Southern California maybe be given preferential consideration	\$ 50,000.00	continuous	
Eccles Foundation, George S and Dolores DorÚ	Preservation and Conservation Grants	not eligible	Grants intended for organizations whose efforts are focused principally within Utah.	varies	continuous	
Edison Fund, Charles	Grants	not eligible	Grants intended for organizations based principally in the New York-New Jersey Metropolitan area.	varies	continuous	
Energy Foundation	Grants	possibly eligible	The foundation makes grants to nonprofit charitable organizations classified as 501(c)(3) public charities by the Internal Revenue Service. The foundation does not support individuals or for-profit organizations.	varies	continuous	The Energy Foundation will support innovative programs to encourage greater energy efficiency in buildings. The foundation is particularly interested in efforts to improve building codes and equipment standards that promote cost-effective, energy efficient technologies.
ExxonMobil Corporation	Environment Grants	possibly eligible	Grants are made to tax-exempt organizations.	varies	continuous	ExxonMobil supports a wide range of programs that foster scientific research on important environmental issues, encourage informed public discussion of scientifically sound environmental policy alternatives, and study and preserve endangered species and habitats. Grants go primarily to organizations that are national in scope. Priorities are studying and conserving endangered species and habitats, fostering scientific research on important environmental issues, and encouraging informed public discussion of scientifically sound environmental policy alternatives. At the local level, contributions are limited to geographic areas where the corporation has significant facilities or large concentrations of employees. Grants at the local level include nature preservation and environmental education activities.
	Arts and Culture Grants	not eligible	Grants are made to tax-exempt organizations.	varies	continuous	ExxonMobil recognizes the important role the arts play in the lives of children and families and has been a long-time patron of various art and cultural institutions. While funding for the arts is limited, it is specifically directed toward those ExxonMobil communities located around the world where we have a major operating presence. Grants support art and cultural organizations, programs, festivals, and performances in communities with significant numbers of ExxonMobil employees. Activities that reach out to children and nontraditional audiences and that contribute to intercultural understanding are given priority.
Ford Motor Company Fund	Grants	possibly eligible	To qualify for a contribution, an organization must be a charitable organization in section 509(a)(1), (2) or (3) of the Internal Revenue Code	varies	continuous	Ford Fund supports not-for-profit organizations in three major areas: innovation and education, community development and American legacy, and auto-related safety education. Through active involvement, Ford Fund seeks to build partnerships with organizations that have a well-defined sense of purpose, a demonstrated commitment to maximizing available resources and a reputation for meeting objectives and delivering high-quality programs and services. Ford Fund places priority on supporting organizations that promote diversity and inclusion.
Getty Trust J Paul	Architectural Conservation Planning Grants	possibly eligible	Nonprofit charitable organizations are eligible to apply for Architectural Conservation Grants. In general, applications should be submitted by the building owner; with the owner's approval, other nonprofit organizations involved in the care of the buildings may also be eligible to apply. The buildings must be owned by a nonprofit, charitable, or tax-exempt organization that is committed to their long-term preservation and maintenance; be accessible to or used for the benefit of the community; and possess the highest available governmental listing of significance available in the country.	\$ 75,000.00	10-Apr-08	Planning Grants provide support for the research, documentation, and analysis necessary to the development of a comprehensive conservation plan. Projects must focus on the historic structure and fabric of the buildings and address conservation issues related to the building's setting.
Great Lakes Commission	Carol A Ratz Memorial Scholarship	not eligible	Individual Scholarship	\$ 1,000.00	31-Mar-08	Although not specific scholarship available, institution worthy of further research for possible funding. Mission Statement : he Great Lakes Commission is a binational public agency dedicated to the use, management and protection of the water, land and other natural resources of the Great Lakes-St. Lawrence system. In partnership with the eight Great Lakes states and provinces of Ontario and Québec, the Commission applies sustainable development principles in addressing issues of resource management, environmental protection, transportation and sustainable development. The Commission provides accurate and objective information on public policy issues; an effective forum for developing and coordinating public policy; and a unified, systemwide voice to advocate member interests.

Name of Organization	Scholarship Name	Eligibility	Justification for Eligibility	Scholarship Maximum Worth	Due Date	Abstract/Mission Statement - Further reasons to pursue funding
History Channel Initiative Foundation	Save our History Program - National Initiative Grants	not eligible	Eligible applicants must partner with a local elementary, middle, or high school, or an organization that provides educational programming for children of similar ages. Applicants may partner with multiple schools or educational organizations.	\$ 10,000.00	1-Jun-07	The History Channel "Save Our History" program is meant to inspire the youth in the community to become the preservationists of tomorrow. Museums, historic sites, historical societies, preservation organizations, libraries, and archives are invited to partner with a local school or youth group and apply for funding to help preserve the history of their communities. Each year, The History Channel awards grants to organizations that partner with schools or youth groups on community preservation projects that engage students in learning about, documenting, and preserving the history of their communities.
Institute of Museum and Library Services (IMLS) - Museum Grants	21st Century Museum Professionals	possibly eligible	Museums meeting the definitions in 45 CFR 1180.3 may apply for these programs. The definition of "museum" includes (but is not limited to) the following institutions if they satisfy the other provisions of this section: Aquariums and zoological parks; botanical gardens and arboretums; nature centers; museums relating to art; history (including historic buildings); natural history; science and technology; and planetariums.	\$ 500,000.00	15-Mar-08	The 21st Century Museum Professionals program supports a range of activities, including professional training in all areas of museum operations and leadership development. This program provides the museum community with support for a variety of training and personnel development activities for museum staff members across all types of museums, as well as the collection and dissemination of information to museum professionals and the public. Project design could include direct dissemination of information through workshops, seminars, and courses or indirect communication through publications and Web sites. Projects should benefit multiple institutions or diverse constituencies.
	Museums for America	possibly eligible	Museums meeting the definitions in 45 CFR 1180.3 may apply for these programs. The definition of "museum" includes (but is not limited to) the following institutions if they satisfy the other provisions of this section: Aquariums and zoological parks; botanical gardens and arboretums; nature centers; museums relating to art; history (including historic buildings); natural history; science and technology; and planetariums.	\$ 150,000.00	15-Nov-07	Museums for America grants are designed to strengthen museums' ability to serve the public more effectively by supporting high-priority activities that advance the institution's mission and strategic goals. In FY 2006, Museums for America funding will support projects and activities, designed by the institution, that strengthen museums as active resources for lifelong learning and key players in the establishment of livable communities. Museums for America grants are designed to be flexible. They can be used for ongoing museum activities, research and other behind-the-scenes activities, planning activities, new programs or activities, purchase of equipment or services, or other activities that will support the efforts of museums to upgrade and integrate new technologies into their overall institutional effectiveness.
Joyce Foundation	Environment Grants	possibly eligible	Nonprofit	unspecified	16-April-07, 15-Aug-07, 10-Dec-07	Protecting the natural environment of the Great Lakes region has been a long-time commitment of the Joyce Foundation. The foundation supports the development, testing, and implementation of policy-based, prevention-oriented, scientifically sound solutions to the environmental challenges facing the region.
Laird Norton Endowment Foundation	Grants	possibly eligible	Eligible organizations must be tax exempt as defined under sections 501(c)(3) and 509(a) of the United States Internal Revenue Code and must administer programs that are consistent with the foundation's mission. Although the foundation provides funding for programs throughout the United States, about 30 to 50 percent of all grants are generally made to organizations operating in the Pacific Northwest.	unspecified	8-Sept-08, 2-Feb-08	Laird Norton Foundation is interested in projects that genuinely seek to contribute to a heightened awareness of the ecological, social, and economic significance of watersheds. As a funder, the foundation hopes to make an important contribution by supporting protection, restoration, education, and advocacy efforts in this field. Its intention is to remain connected with American forests by concentrating its attention on watersheds.
National Foundation for the Arts and the Humanities National Endowment for the Humanities (NEH) - Office of Challenge Grants	Challenge Grants	possibly eligible	With the exception of elementary and secondary schools, any U.S. nonprofit institution (public agency or private nonprofit organization) working wholly or in part within the humanities may apply for a challenge grant. Satellite or affiliated institutions (e.g., university museums) should seek the counsel of NEH staff on questions of separate eligibility. Teaching, public programming, and scholarly research in the humanities are allowable in this program.	\$ 1,000,000.00	1-May-07, 1-Nov-07	The National Endowment for the Humanities (NEH) Office of Challenge Grants helps institutions and organizations engaged in humanities activities to secure long-term support for, and improvements in, their programs and resources. Awards made to museums, public libraries, colleges, historical societies, public television and radio stations, universities, scholarly associations, and other nonprofit entities improve their financial stability and the quality of their humanities activities.
	Challenge Grants in the United States History, Institutions and Culture	possibly eligible	With the exception of elementary and secondary schools or school districts, any U. S. nonprofit institution (public agency or private nonprofit organization) working wholly or in part with the humanities may apply for a challenge grant. Affiliated institutions (e.g., university museums) should consult with NEH staff on questions of separate eligibility. Applications are welcome from colleges and universities, museums, public libraries, research institutions, historical societies and historic sites, public television and radio stations, scholarly associations, state humanities councils, and other nonprofit entities.	\$ 1,000,000.00	1-Feb-08	
National Foundation for the Arts and the Humanities National Endowment for the Humanities (NEH) Division of Public Programs	Planning Grants for Libraries, Museums, or Special Projects	not eligible	Any U.S. nonprofit, IRS tax-exempt organization is eligible to apply. State and local government agencies are also eligible. Individuals must have an institutional affiliation.	unspecified	unspecified	Public Programs for Libraries, Museums, or Special Projects grants are available to support the planning or implementation of a project. The deadlines and award amounts for Planning Grants differ from those of Implementation Grants (refer to the deadline and amount note fields of this record).

Name of Organization	Scholarship Name	Eligibility	Justification for Eligibility	Scholarship Maximum Worth	Due Date	Abstract/Mission Statement - Further reasons to pursue funding
National Foundation for the Arts and the Humanities - National Endowment for the Humanities (NEH) - Division of Education Programs						
National Foundation for the Arts and the Humanities - National Endowment for the Humanities (NEH) - Division of Preservation and Access						
National Gallery of Art - Center for Advanced Study in the Visual Arts (CASVA)						
National Heritage Memorial Fund						
National Heritage Memorial Fund						
National Science Foundation (NSF)						
National Science Foundation (NSF) - Directorate for Biological Sciences (BIO) - Division of Environmental Biology (DEB)						
National Society of Daughters of the American Revolution						
National Trust for Historic Preservation	National Trust/ACHP Award for Federal Partnerships in Historic Preservation	not eligible	projects must have been completed in the past three years	\$ 100,000.00	unspecified	
	Trustee's Award for Organizational Excellence	not eligible	projects must have been completed in the past three years	unspecified	1-Mar-08	
	Johanna Fabrot Fund for Historic Preservation	possibly eligible	Nonprofit organizations and public agencies are eligible for grants. Individuals and for-profit businesses may apply only if the project for which funding is requested involves a National Historic Landmark.	\$ 10,000.00	varies	
	Preservation Fund	possibly eligible	Applicants must be nonprofit organizations or public agencies.	\$ 5,000.00	varies	
	Cynthia Woods Mitchell Fund for Historic Interiors	possibly eligible	Nonprofit organizations and public agencies are eligible for grants. Individuals and for-profit businesses may apply only if the project for which funding is requested involves a National Historic Landmark.	\$ 10,000.00	varies	
Newberry Library - Long or Short Term Fellowships						
Nordson Corporation Foundation						
Norfolk Foundation						
Northwest Fund for the Environment						
Northwestern Energy						
Renewable Energy and Energy Efficiency Partnership (REEEP)						
Riley Foundation, Mabel Louise						
Rothschild Foundation, Judith						
Royal Institution of Chartered Surveyors (RICS)						
Rubin Foundation, Shelley and Donald						
Schultz Foundation, Arthur B.						
Smithsonian Institution (SI) - National Museum of American History						
Smithsonian Institution (SI) - Museum Conservation Institute (MCI)						
Smithsonian Institution (SI) - Architectural History and Historic Preservation (AHHP)						
Smithsonian Institution (SI) - Museum Conservation Institute (MCI)						
Smithsonian Institution (SI) - Smithsonian Institution Archives						
Society of American Archivists (SAA)						
Society of Architectural Historians (SAH) Fellowships						
Sumitomo Foundation						
Thomson Foundation, Virgil						
Tiffany and Co. Foundation						
Tourism Cares						
Truman Hearland Community Foundation						
Trust for Mutual Understanding (TMU)						
U.S. Bancorp Foundation						
United Nations (UN) - United Nations Educational, Scientific and Cultural Organization (UNESCO)						
United Nations (UN) - United Nations Educational, Scientific and Cultural Organization (UNESCO) - UNESCO Fellowships Programme						
United States Department of Commerce (DOC) - National Oceanic and Atmospheric Administration (NOAA)						
United States Department of Defense (DOD) - Department of the Army - US Army Corps of Engineers (USACE)						
United States Department of Defense (DOD) - Department of the Army - US Army Environmental Center (USAEC)						
United States Department of Defense (DOD) - Environmental Security Technology Certification Program (ESTCP)						
United States Department of Defense (DOD) Strategic Environmental Research and Development Program (SERDP) - SEED Solicitation (Federal and Non-Federal)						
United States Department of Energy (DOE)						
United States Department of Energy (DOE) - Office of Science - Office of Basic Energy Sciences (BES)						
United States Department of Energy (DOE) - Office of Science - Office of Biological and Environmental Research Program (BER)						
United States Department of State (DOS) - Bureau of Educational and Cultural Affairs (ECA)						
United States Department of the Interior (DOI) - National Park Service (NPS)						
United States Environmental Protection Agency (EPA)						
United States Environmental Protection Agency (EPA) - Great Lakes National Program Office (GLNPO)						
Vernacular Architecture Forum (VAF)						
Weeden Foundation						
Westinghouse Electric Company						
White House Historical Association (WHHA)						
Wilburforce Foundation						

Name of Organization	Scholarship Name	Eligibility	Justification for Eligibility	Scholarship Maximum Worth	Due Date	Abstract/Mission Statement - Further reasons to pursue funding
Wildlife Forever						
Windham Foundation						
World Monuments Fund (WMF)						

Architectural Engineering

The architectural engineering team accomplished several tasks, the most notable of which is a working energy model. The team also was able to make general conclusions and recommendations about the states of the mechanical, electrical, and plumbing systems in the building

Civil Engineering

The structural engineering team determined that the existing structure should be adequate should an additional floor be added to Alumni Memorial Hall. Preliminarily, no retrofits would be necessary, however, we would suggest a more thorough analysis to properly determine the buckling loads of the columns, which we feel would prove to be most critical in this case.

Recommendations:

Architecture

To continue on the work that was started this semester, as well as work with the two teams and work on getting their needs incorporated into the initial floor plan created this semester. We would also recommend working with the structural team to determine what walls within alumni are load bearing in order to enhance and make the new design of Alumni memorial more efficient.

Architectural Engineering

To continue on with the project, the architectural engineering team should take the new floor plans from the architects and design new systems based on the results of this semester's work. The next team should also set up lines of communication between teams early on and not wait as long for people to get back to them.

Civil Engineering

As the architecture team decided a third story addition would not be necessary, we suggest that in future semesters, the structural team should perform a more thorough and exhaustive condition assessment of the current structure. We are confident that the structure, as designed, can withstand the minimum loads outlined in both the original and current building codes. However, the structure's condition should be checked to assure that all components are working as designed, and that damaged components can be strengthened or replaced. This assessment would require some destructive exploration which may not be suitable for this sort of project.

References:

Architectural and Civil Engineering

2006 Chicago Building Code
Radiant Heating and Cooling Handbook by Richard D. Watson and Kirby S. Chapman, McGraw-Hill Handbooks
HVAC Systems Design Handbook by Roger W. Haines and C. Lewis Wilson, McGraw-Hill Handbooks
IIT Department of Facilities
Prof. Nancy Hamill-Governale – hamill@iit.edu
Siemens Building Technologies - <http://www.sbt.siemens.com/>;
on-campus Siemens representative

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Prof. Nancy Hamill-Governale – assisted with obtaining data from Facilities
Prof. Ralph Muehleisen – Advisor; assistet architectural engineering questions and reference materials
Siemens – Provided information about their control systems

Prof. Eduardo De Santiago: Advisor; assisted with determining material strengths

Prof. Jeff Budiman: assisted with soil information

Holabird and Root: assisted with design and knowledge of the future of Alumni Memorial Hall.